

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

April 27, 1960

U. S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing ServiceU. S. DEPARTMENT OF COMMERCE
Weather BureauThe Weather, Fall and Winter 1959 - 1960Temperature

October temperatures averaged colder than seasonal throughout the State, but in general there were no extremely warm or cold periods. November was severely cold the first three weeks. New record low readings were set at a number of stations on the 13th, 16th, and 17th. Temperatures moderated the latter 10 days of the month and continued unseasonably mild through December.

There were two cold periods in January. One on the first of the month and another around the middle of the month, but as a whole, temperatures averaged near long-term means except for being a little colder than usual in the western division.

The first three weeks of February were mild, but the last week turned severely cold, and very cold weather continued into the first week of March. This was one of the coldest periods ever experienced in Montana so late in the winter season.

After the early-month cold spell, March was unseasonably warm. The periods of unseasonable cold and warmth during the winter resulted in ice-jam flooding in the central and southwestern portions of the State during parts of November, January, and February. Other than light loss of livestock and property, damage was not extensive.

Precipitation

Precipitation was heavy in October, and relatively heavier in November. Totals averaged well above normal in most areas except in the southeast portion in October, and in the southwest portion in November. Except for local areas, precipitation was deficient for the balance of the winter. For the fall-winter season as a whole, precipitation averages were near, and in some cases above, the long-term means.

Water Supply Forecast as of April 1960West of the Divide

The water supply outlook for west of the Divide is for greater than average flows in all major streams for the water year ending September 30. This is assuming that precipitation for spring and summer will be near seasonal averages. The percent of expected streamflow based on the 1943-57 average for the various river basins is Clark Fork 110 percent, Flathead 95 percent, and Kootenai 145 percent. For the six-month April-September period, total flows are expected to run about 10 percent below average.

East of the Divide

In contrast to the good water supply outlook west of the Divide, a general shortage is expected in much of the area east of the Divide. Deficient precipitation

during December-March has resulted in lower snow packs than usually experienced April-September streamflow, based on 1943-57 averages, for the Missouri River and tributaries is expected to be 70 to 80 percent of average; in the Yellowstone 60 to 70 percent; Milk 80 percent; and St. Mary's 90 percent. This forecast anticipates near normal precipitation during the spring and summer. Deficient precipitation will result in even smaller flows than forecast. Near normal flows are expected in only Shields and Musselshell drainages, and in general, the south half of the area east of the Continental Divide is where local shortages will be noted -- unless precipitation is heavier than usual.

(Over)

Moderate to abundant supplies of soil moisture last fall enabled most winter wheat fields to make adequate growth, thus putting the crop in generally good condition as winter set in. Combining of small grains was virtually complete by November 1, but the wet fall weather retarded sugar beet and safflower harvests. Some sugar beets froze in the ground and were abandoned.

Heavy snow and severe cold during mid-November caused moderate to heavy shrinkage of range livestock and necessitated heavy supplemental feeding. Fortunately, the storm lasted for only about a week and by December 1 warm temperatures had melted snow, opening up ranges for grazing.

Mild, storm-free weather prevailed during December, January and the first three weeks in February. Snow cover was light, allowing extensive grazing of pastures, thus holding supplemental feeding at seasonal to less than seasonal rates.

Severely cold weather the last week of February and during the first week of

March caused some death loss of newborn calves and lambs. Heavy supplemental feeding was necessary to prevent shrinkage and to keep breeding stock in good condition for calving and lambing.

The last three weeks of March were very mild and favorable for livestock. Calving and lambing progressed well with prospects now excellent for both crops. Early growth of range grasses was stimulated by the warm weather.

Hay and roughage supplies were generally adequate although shortages developed in some sections and feed purchases from surplus areas were necessary. Carryover of hay will probably be somewhat below average due to early winter and early spring cold, stormy weather.

Prospects for this year's winter wheat and other crops appear bright. Winter kill of winter wheat was very light and soil moisture reserves are now adequate to abundant in most areas.

Six-Month Total Precipitation, October 1959 - March 1960 (Inclusive)

WESTERN DIVISION

<u>Station</u>	<u>Precipitation</u>	<u>6-Month Long-term mean</u>	<u>Station</u>	<u>Precipitation</u>	<u>6-Month Long-term mean</u>
Alborton	8.43		Missoula	5.28	5.19
Big Fork 12 S	12.21		Missoula WBAS	5.57	5.70
Creston	11.80		Ovando 1 SW	8.74	8.13
Darby	6.70	8.33	Ovando 7 WNW	5.05	
Deer Lodge	2.66	2.97	Philipsburg	4.43	5.50
Drummond FAA AP	3.55	3.78*	Pleasant Valley	9.24	11.03
East Anaconda	4.54	4.78	Polebridge	13.86	
Elliston	5.70		Polson Airport	5.12	6.38
Fortine 1 NNE	10.97	8.30	Polson Kerr Dam	5.83	
Hamilton	5.22	5.51	Rexford RS	11.18	
Haugan	20.83	21.98	Saint Ignatius	7.07	5.54
Heron 2 NW	23.91	24.23	Seeley Lake RS	15.80	
Hungry Horse Dam	20.10		Stevensville	6.34	6.13
Kalispell WBAS	10.05	7.74	Sula	6.89	
Kalispell	9.06		Summit	22.96	
Libby RS 1 NE	12.76	11.77	Superior	7.56	8.69
Libby 32 SSE	15.43		Thompson Falls PH	12.58	12.42
Lindbergh Lake	18.01		Trout Creek 2 W	21.57	22.44
Lonepine 1 WNW	5.30	5.81	West Glacier	18.38	16.18
			Yaak	12.92	

*Means for short-term period of record 1955.

SOUTHWESTERN DIVISION

(3)

Six-Month Total Precipitation, October 1959 - March 1960 (Inclusive)

Station	Precipitation	6-Month Long-term mean	Station	Precipitation	6-Month Long-term mean
Alder	2.75		Jackson	5.48	
Belgrade FAA AP	3.60	4.78*	Lakeview	5.03	
Boulder State School	3.36		Lima	1.44	2.87*
Bozeman Agr. College	6.76	6.64	Norris 3 ENE	5.29	
Bozeman 12 NE	14.25		Norris Madison PH	8.15	5.75
Butte FAA AP	2.80	4.01	Pony	7.39	
Dell 12 SSW	.95		Trident	3.66	
Dillon FAA AP	2.38	2.14*	Twin Bridges	2.30	
Dillon WMCE	3.26	3.34	Virginia City	5.28	4.51
Divide 2 NW	3.54		West Yellowstone	7.61	11.57
Ennis	2.83	2.29	Whitehall	---	2.05*
Glen 4 N	1.74		Wisdom	4.39	
Hebgen Dam	11.98	14.63			

NORTH CENTRAL DIVISION

Babb 6 NE	5.52	6.08	Harlem	4.55	3.23
Big Sandy	3.01	2.73	Havre WBO	4.74	3.28
Blackleaf	3.70		Hays	4.38	
Brady Aznoe	1.79		Joplin 1 N	1.82	
Browning	4.92	4.61	Lonesome Lake	3.88	
Chester	2.25		Malta	3.02	3.01
Chinook	3.72	3.27	Malta 35 S	2.42	
Choteau	2.29	2.06	Phillips 1 S	3.22	
Cleveland 5 ENE	2.37		Saco(Nelson Reservoir)	1.11	
Conrad	3.35	2.73	Shelby	1.39	
Cut Bank FAA AP	2.89	2.43	Shonkin 7 S	11.00	
Dunkirk 14 NNE	3.29	2.71	Simpson 4 NNW	2.60	1.98
Fairfield	2.61	2.20	Sweetgrass	3.18	
Forks 4 NE	2.75		Telegraph Creek	3.77	
Fort Assinnibone	3.84	2.56	Tiber Dam	1.75	
Fort Benton	5.10	4.33*	Valier	2.74	2.51
Geraldine	6.15				
Gilford	2.47				
Goldbutte 7 N	2.24				

CENTRAL DIVISION

Augusta	3.96	3.66	Lincoln RS	10.31	
Austin 1 W	4.95		Lincoln 14 NE	8.93	
Canyon Ferry PH	3.31		Lenep	5.63	
Cascade 5 S	3.57	3.87	Martinsdale	3.75	2.98*
Cascade 20 SSE	3.25		Melstone	2.28	3.34
Flatwillow 4 ENE	2.85	3.06	Moccasin Exp. Sta.	3.32	3.22
Gibson Dam	6.51	5.30	Raynesford	4.42	
Grass Range	4.50		Roundup	1.77	2.77
Grass Range 15 NNE	4.08		Roy 8 NE	4.40	
Great Falls WBAS	4.29	4.23	Stanford 2 NE	4.95	3.82
Harlowton	2.85		Sun River 5 SW	2.78	
Helena WBAS	3.38	3.62	Toston 3 SW	2.92	
Holter Dam	2.85	3.52	Townsend	2.49	
Kings Hill	18.19		White Sulphur Springs	6.88	7.42
Lewistown FAA AP	4.02	4.68	Winifred	4.98	3.68

*Means for short-term period of record 1955.

SOUTH CENTRAL DIVISION

(4)

Six-Month Total Precipitation, October 1959 - March 1960 (Inclusive)

<u>Station</u>	<u>Precipitation</u>	<u>6-Month Long-term mean</u>	<u>Station</u>	<u>Precipitation</u>	<u>6-Month Long-term mean</u>
Belfry	1.96		Livingston	4.27	4.29
Big Timber	4.26	4.44	Livingston FAA AP	3.49	3.84*
Billings Water Plant	3.42		Mystic Lake	7.14	8.99
Billings WBAS	4.66	4.32	Nye	4.66	
Bridger	2.76		Nye (Mouat Mine)	7.00	
Busby	3.24	3.13	Rapelje 4 S	5.73	3.66
Columbus	2.88	3.93	Red Lodge	6.49	6.40
Crow Agency	4.39	5.28	Wilsall	4.22	
Hardin	2.95		Wilsall 8 ENE	5.82	
Huntley Exp. Station	3.07	3.55	Wyola	4.65	5.35*
Hysham 19 SSE	4.13		Yellowstone Park		
Hysham	2.39		NE Entrance	9.72	
Joliet	3.93				

NORTHEASTERN DIVISION

Bredette	1.73		Mosby 2 ENE	2.55	
Circle 7 N	2.52	2.06	Nohly 3 WNW	2.62	
Cohagen 11 SW	2.32		Opheim 10 N	1.64	
Culbertson	3.66	2.58	Opheim 12 SSE	1.17	
Fort Peck PH	2.88		Poplar	2.04	2.50
Frazer	2.55	3.35	Redstone	2.64	
Glasgow WBAS	2.79	3.21	Richey	2.18	
Glendive	2.20	2.89	Savage	2.88	2.67
Haxby 18 SW	3.60	3.11	Scobey	3.28	
Hinsdale	2.64		Sidney	3.56	
Jordan	3.03	2.48	Thoeny	2.56	
Lambert	1.80		Vida	4.56	4.67
Lustre 4 NNW	2.73	2.03	Westby	3.61	
Medicine Lake 3 SE	3.64	2.34	Wolf Point 4 ESE	3.26	

SOUTHEASTERN DIVISION

Albion	2.69		Mildred	2.54	2.89
Birney	2.58		Miles City	3.10	
Boyes	3.04		Miles City FAA AP	3.06	3.49
Brandenberg	3.98		Moorhead	2.66	
Broadus	3.66	3.76*	Plevna	2.36	3.05
Colstrip	3.85	4.73	Ridgway	3.01	
Ekalaka	2.98	2.95	Rock Springs	2.21	
Forsyth 2 E	1.85		Terry	1.10	
Ingomar 11 NE	1.95		Wibaux	2.14	
Lane Deer	4.14				

*Means for short-term period of record 1955.

P. J. Creer, Agr. Statistician in Charge
Agricultural Marketing Service-USDAR. A. Dightman, State Climatologist
Weather Bureau-U. S. Dept. of Commerce